

CLAIMS

1. A heat exchanger of a ventilating system comprising:

heat exchange plates laminated with regular intervals so that a first air
5 passage through which indoor air being discharged to outside of a building passes
and a second air passage through which outdoor air being introduced into the
interior of the building passes are sequentially formed;

first corrugation plates attached to the first air passage and obtaining a
space to allow outdoor air to pass therethrough; and

10 second corrugation plates attached to the second air passage and
obtaining a space to allow outdoor air to pass therethrough,

wherein the heat exchange plates are made of a paper material with
numerous fine holes that are able to generate a capillary phenomenon.

15 2. The heat exchanger of claim 1, wherein the heat exchange plates
are made of a Korean paper with high fiber intensity and numerous fine holes that
are able to generate a capillary phenomenon.

3. The heat exchanger of claim 2, wherein the heat exchange plates
20 contains 60~70% of holo cellulose, 10~20% of lignin and 5~10% of lime.

4. The heat exchanger of claim 2, wherein the Korean paper
constituting the heat exchange plates is fabricated with bast fiber of the paper

mulberry as a key component.

5. The heat exchanger of claim 4, wherein a process for fabricating the Korean paper comprising the steps of:

5 bundling the paper mulberry, putting it in a container with water, boiling it to a degree that its skin is easily peeled off, peeling and drying them;

soaking the dried skin of the paper mulberry in the water, sorting out only the bast fiber portion, putting the bast fiber portion in caustic soda and boiling it more than three hours, and wringing it with a compressor; and

10 putting the moisture-removed bast fiber in a liquid that has been prepared by mashing roots of the paper mulberry and pressing them out, and mixing them evenly, and filtering the resulting paper solution by using a sieve.

6. The heat exchange of claim 1, wherein the first corrugation plate
15 and the second corrugation plate are made of an aluminum material.

7. A heat exchanger of a ventilating system comprising:

heat exchange plates laminated with regular intervals so that a first air passage through which indoor air being discharged to outside of a building passes
20 and a second air passage through which outdoor air being introduced into the interior of the building passes are sequentially formed;

first corrugation plates attached to the first air passage and obtaining a space to allow outdoor air to pass therethrough; and

second corrugation plates attached to the second air passage and obtaining a space to allow outdoor air to pass therethrough,

wherein the heat exchange plates, the first corrugation plates and the second corrugation plates are made of a paper material that is able to generate
5 a capillary phenomenon.

8. The heat exchanger of claim 7, wherein the heat exchange plates, the first corrugation plates and the second corrugation plates are made of a Korean paper with a high fiber strength and numerous fine holes.

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9. The heat exchanger of claim 7, wherein the heat exchange plates, the first corrugation plates and the second corrugation plates contain 60~70% of holo cellulose, 10~20% of lignin and 5~10% of lime.

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10. The heat exchanger of claim 8, wherein the Korean paper constituting the heat exchange plates is fabricated with bast fiber of the paper mulberry as a key component.

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11. The heat exchanger of claim 10, wherein a process for fabricating the Korean paper comprising the steps of:

bundling the paper mulberry, putting it in a container with water, boiling it to a degree that its skin is easily peeled off, peeling and drying them;

soaking the dried skin of the paper mulberry in the water, sorting out only

the bast fiber portion, putting the bast fiber portion in caustic soda and boiling it more than three hours, and wringing it with a compressor; and

putting the moisture-removed bast fiber in a liquid that has been prepared by mashing roots of the paper mulberry and pressing them out, and mixing them
5 evenly, and filtering the resulting paper solution by using a sieve.